United States Military Academy, Ice House
(U.S.M.A., Building No. 644)
Mills Road at Howze Place
West Point vicinity
Orange County
New York

HABS No. NY-5708-58

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
Mid-Atlantic Region, National Park Service
Department of the Interior
Philadelphia, Pennsylvania 19106

HISTORIC AMERICAN BUILDING SURVEY

UNITED STATES MILITARY ACADEMY, ICE HOUSE

U.S.M.A., Building No. 644 HABS No. NY-5708-58

Location: East side of Mills Road, directly across from Howze Place - Mills Road intersection
West Point Vicinity
Orange County
New York

USGS: West Point Quadrangle,
Universal Transverse Mercator Coordinates:
18.586734.4581795

Present Owner: Department of the Army
United States Military Academy (USMA)
West Point, New York 10996

Present Use: Warehouse, demolition date March 1987.

Significance: The ICE HOUSE (Bldg 644) was one of the larger capacity icehouses in the region. The New York State Historic Preservation Office determined that it was a rare surviving building type since bulk ice storage of this large scale was made obsolete. The ICE HOUSE (Bldg 644) was a 5,384 sq. ft. wooden building (126' 8" X 42' 6") capable of storing 2,000 tons of ice. An adjustable gallery for loading the ice ran the length of the structure and approximately 120' to the Lusk Reservoir.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1928. The building is recorded in the USMA Real Estate Officer Record Book as being constructed in this year.
2. Architect: Not known.
3. Original and subsequent owners: The title of the land on which the building stood is the Department of the Army, United States Military Academy.
4. Builder, Contractor, Suppliers: Not known.
5. Original plans and construction: An original photograph (see NY-5708-58-21) was located in the USMA Real Estate Officer Record Book. The view shows the north and west facades of the four bay ICE HOUSE (Bldg 644). A portion of the adjustable gallery is also barely visible in the background of the photograph. The original drawing (see NY-5708-58-22), dated April 1916, shows a three bay ice house and is not an as-built drawing. The original cost of the building as noted in reference D.1.c. was $22,140.14.
6. Alterations and additions: At an undetermined date the adjustable gallery system was removed as physical evidence suggests.

   In 1954 the alterations shown in the 1951 drawings (NY-5708-58-25,-26,-27 and-28) were made. The alterations included removal of the roof dormers. Also, the door opening on the south bay was widened and a concrete platform and stairs were added (NY-5708-58-14 and -25). The interior alterations included cutting framed openings between the bays (NY-5708-58 -10), addition of an electrical service drop and lighting, and addition of a deck storage platform in the north bay. The present day photographs (NY-5708-58-1 through NY-5708-58-20) show the ICE HOUSE (Bldg 644) with all the alterations as it existed prior to demolition in March 1987.

B. Historical Context:

References D.1.a. was the only historical written documentation located in regard to the ICE HOUSE (Bldg 644). Reference D.1.a. states on page 26 "New Ice House. A new icehouse in the neighborhood of Lusk Reservoir is greatly needed. The most convenient site would appear to be below the dam, where the ice can be easily conveyed and packed by gravity." Later on page 35 appears this entry: "Ice House. Estimate .... $5,000.00" During the time of the 1888 writing and until 1928 there were at least two other small, less elaborate icehouses in existence at West Point.

As noted in reference D.1.b.(page 48) the teaching mission at West Point has been the primary importance of the Military Academy throughout history. Within the historical context of the USMA, the ICE HOUSE (Bldg 644), occupied a minor historical significance. However, as pointed out in the statement of significance on the title page of this report, in the context of the Hudson Valley region of New York State, the ICE HOUSE (Bldg 644) occupied a more significant historical status in that it was one of the few surviving ice houses in this region. No other research sources of existing icehouses in this region were located.

Part II. ARCHITECTURAL INFORMATION

A. General Statement:
   1. Architectural Character: Built in the area south of Lusk Reservoir at the United States Military Academy, this was one of the rare surviving icehouses in the Hudson Valley region of New York State. This functional 4-bay structure with its vertical slot doors, dormers and adjustable gallery was representative of a past era of ice useage made obsolete by technological development.
   2. Condition of fabric: The exterior wood siding, foundation and interior were in sound condition at the time of demolition.

B. Description of Exterior:
   1. Overall dimensions: The one-story structure had a stepped roofline and floor. The building, which was rectangular in form was 126'8" across and 42'6" deep, featuring four equal sized bays. (Sketch #4, Floor Plan).
   2. Foundations: The foundation consisted of 1-3-5 poured in place concrete walls 18" thick. Above grade walls were concrete. A 6" drain just below grade surrounded by broken stone extended the length of the building. Cinder fill was placed on the dirt level and extended to the interior plank floor. (The cinder absorbed the water from the melting ice).
   3. Walls: Exterior walls are finished with nominal 7/8" X 8" novelty siding (painted white) nailed into 2" X 2" vertically applied furring strips. Furring strips are nailed through a layer of heavy felt paper and wood sheathing at 16" on center. 1" X 6" T&G wood sheathing is nailed to the inside face of the studs. A thin layer of kraft faced insulation (similar to a mixture of straw and animal hair) is held in place by 2" X 2" furring strips, installed vertically. Refer to Sketch #2 for a typical composite construction of the exterior wall.

4. Structural systems, framing: Exterior walls and partitions between the four bays are wood, load-bearing. The wood stud framing system is composed of 2" X 8" unfinished wood studs (rough cut studs) 16" on center. Floor joists are 4" X 4" ("sleepers") 24" on center. Roof rafters are 2" X 8", 20" on center. Rafters are doubled at trusses and at sides of dormers. Trusses are 3" X 10".
5. Stoops: A rectangular concrete stoop was built at the door of Bay #4 during the conversion to a warehouse. (see NY-5708-58-1, -2,-25).
6. Chimneys: There were no chimneys on the building.
7. Openings:
   a. Doorways and doors: Photographs numbers NY-5708-58-6, -7 and -8 show details of the vertically stacked doors. The head of the door was canted (sloped). The wood door jamb had a ploughed slot for a loose fitting plank. Hasp plates were provided near the top and bottom of each door leaf for purposes of security. The original wood sill plate (6" X 8" member) was anchored into the concrete foundation wall. As originally constructed, the sill plate ran continuous around the base of the exterior.

      In approximately October 1954, the existing wood floor and framing system were removed and replaced with 5" reinforced concrete floor slab. At this time the sill plates were cutout at all west elevation door openings. The portion of concrete under the 6" X 8" sill plate was the top of the original foundation wall, and the section of concrete beyond the joint was the 5" reinforced concrete slab placed in 1954.

      All doors within the vertical slot at the west elevation opened independent of one another. The doors were constructed of normal 2" X 6" with canted head, sill and jambs. The door was hung with four (4) metal strap hinges, permitting them to swing outward a full 180° when opened. The 2" loose plank interior finish indicated on the construction drawings was removed at an unknown date and the interior trim replaced with a 2" x 6". The doors when closed did not fit tightly, but rather resulted in approximately a 1 1/2" gap between the vertically stacked door panels.

      During the conversion to the warehouse the doors on the east elevation were filled in with siding. Also, the door in Bay #4 on the west elevation was cut out and sliding doors were installed (NY-5708-58-10).
   b. Windows and shutters: The building has no fenestration. However, two louver attic ventilation openings in the north and south elevations are shown in the original photograph (NY-5708-58-21). The end elevation of original drawing #580 (NY-5708-58-23) shows the 2' X 4' vent.

8. Roof:
   a. Shape, covering: The stepped gable roof was covered with asphalt shingles.
   b. Cornice, eaves: The eaves were overhanging extensions of the gable roof. There were no gutter systems or cornices.
   c. Dormers, cupolas, towers: There were originally eight dormers on the building. One dormer was located above each set of doors on the east and west elevations. During the conversion to a warehouse all of the dormers were removed and the roof was filled in with asphalt shingle. Two cupola-like structures are shown on the peak of the roof on the front elevation of the 1916 drawing #579 (photograph NY-5708-58-22) however, these were never added to the original building (see photocopy of original historic photograph NY-5708-58-21).
9. Other: Ladders were mounted on the northside of each of the eight vertical doors. They were removed during the conversion to a warehouse.

C. Description of the Interior:
1. Floor plans: The general layout of the rectangular building is shown on the floor plan. (Sketch #4)
2. Stairways: There were no interior stairways.
3. Flooring: The original 2" wide plank floor was laid 1" apart as shown on the transverse section of original drawing #580 (NY-5708-58-23). During the conversion to a warehouse a new 5" concrete slab with No. 4 wire mesh on 4" centers was installed. In addition, three new concrete ramps were installed at each of the new framed openings (See 5a. below).
4. Wall and ceiling finish: The interior was finished with nominal 1" X 6" beaded wood siding (commonly referred to as "ceiling" boards). Refer to attached Sketch # 2 for a typical composite construction of the exterior wall.

   The interior wall construction for the dividing walls between the individual bays consisted of unpainted exposed wall finish of 1" X 6" beaded siding on both sides of the partitions. The partition was full height and framed with rough cut 2" X 8" @ 16" O.C. heavy felt paper secured to both sides prior to installing the finished wood siding. Refer to attached Sketch # 3 for a typical composite construction of the interior wall.

   The interior ceiling construction included wood trusses and 1" X 6" beaded board ceiling finishes. The trusses were constructed from 3" X 10" bottom chords with 2" X 8" diagonal bracing and top chord. Six trusses were spaced alternating at 9' and 19' on center with 2" X 8" wood rafters spaced ± 1" - 8" between them. The top chord (tie member) was finished off with 1" X 6" beaded boards to produce a flat ceiling section.

The attic space created about this flat ceiling was totally enclosed except for gable end louvers at both the north and south elevations. As previously indicated, the complete interior was finished off with 1" X 6" beaded wood siding (unpainted).

5. Openings:
   a. Doorways and doors: Framed openings were added to the interior partitions separating the bays during the conversion. See B.7.a. for description of door to the exterior.
   b. Windows: There were no windows in the building. The vertically stacked doors provided natural light when opened.
6. Decorative features and trim: There were no decorative features or trim on this functional building.
7. Hardware: See B.7.a. for description of original hinges and latches on the doors.
8. Mechanical equipment:
   a. Heating, air conditioning, ventilation: There were no systems of this type in the building when it was used as the ICE HOUSE (Bldg 644). However, photograph NY-5708-58-10 shows the vestiges of a heating vent pipe in the second bay. The vents were attached to a furnace. The installation date of this rudimentary heat source is unknown. Its purpose was probably to provide a heated warehouse storage space.
   b. Lighting: There was no electricity in the original building. However, during the conversion, an electrical service drop and interior hanging lights in each bay were added. (Photograph #NY-5708-58-27).
   c. Plumbing: There was no plumbing system in the building.
9. Original furnishings: There were no original furnishings in the building.

D. Site:
1. General setting and orientation: The building faced east to Mills Road and was built with the west elevation close to a rocky hillside. The north elevation faced the Lusk Reservoir Dam. Conifers cover the areas of the north and west elevations. The east elevation was clear as this area was used for loading ice onto the icecarts. (Sketch #1, Site Plan)
2. Historic landscape design: The historic landscape was essentially the same as present day except the trees were smaller. (Compare historic photograph NY-5708-58-21 to NY-5708-58-1 and -2, present day photographs).
3. Outbuildings: There were no outbuildings for the ICE HOUSE (Bldg 644).

PART III. SOURCES OF INFORMATION

A. Architectural drawings: Three original drawings dated April 1916 were located in the USMA Architectural Archive at West Point, NY Photographs of the drawings are numbered NY-5708-58-22, -23 and 24. Photographs -24 shows the gallery section which was demolished at an unknown date so it is unknown if the drawing accurately depicts how the gallery was constructed. Photographs -22 and -23 show a typical ice house plan. The ICE HOUSE (Bldg 644) was constructed as a four bay instead of the three bay building shown in the drawings.

The cupola-like structures shown on the roof in drawings NY-5708-58-22 and-23 were not constructed (they are not shown in historic photograph). The construction and general framing show the building as it was constructed. The alteration drawings showing the conversion of the ICE HOUSE (Bldg 644) to a warehouse are located in the Architectural Archive. (Photographs #NY-5708-58-25, -26, -27, -28). The warehouse conversion included a single deck platform instead of the double deck shown in NY-5708-58-28.

B. Historic views: One historic photograph was located in the USMA Real Estate Officer Record Book. The date is ca. 1928. The photographer is unknown.

C. Interviews: Viable sources for interviews were not found.

D. Bibliography:

1. Primary and unpublished sources:
   a. Reports in regard to the proposed New Academic Buildings at the United States Military Academy, West Point, New York West Point: USMA Press and Bindery, January 1888.
   b. WEST POINT - An Overview of the History and Development of the United States Military Academy by Robie S. Lange, Historic American Buildings Survey, National Park Service, 1984.
   c. USMA Real Estate Officer Record Book, unpublished record.

E. Likely sources not yet investigated: No other known sources of information were located.

F. Supplemental material: Small format graphic documentation showing the site plan (Sketch #1), Exterior and Interior Wall construction (Sketch #2 and #3) and basic Floor Plan (Sketch #4) are included. A Preliminary Case Report prepared for the Advisory Council on Historic Preservation (ACHP) and an Environmental Assessment prepared for the project demolition are also included here along with the Memorandum of Agreement (MOA).

PART IV. PROJECT INFORMATION

An Environmental Assessment (EA) was prepared by the Department of the Army (DA), United States Military Academy (USMA) in February 1986 proposing demolition of the ICE HOUSE (Bldg 644). The New York State Historic Preservation Office (SHPO) responded to the EA with an "adverse effect" and requested a Preliminary Case Report (PCR) in accordance with Historic Preservation regulations. The PCR was submitted to the ACHP in June 1986. In August 1986, the ACHP forwarded a Memorandum of Agreement (MOA) to USMA which stipulated that the ICE HOUSE (Bldg 644) must be documented in accordance with HABS standards. The MOA was agreed upon and signed by USMA, ACHP and SHPO. The ICE HOUSE (Bldg 644) was demolished on March 23 and 24, 1987.

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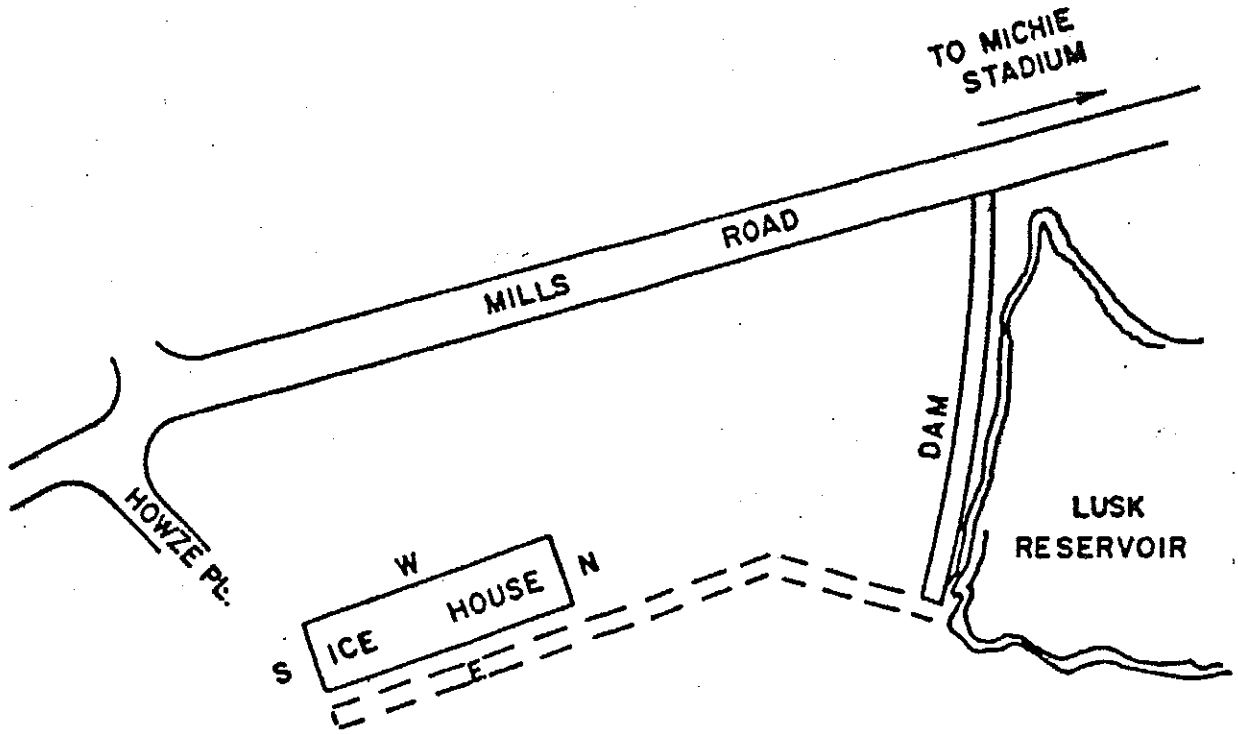
Date: May 20, 1987

Acknowledgement: Part II. Architectural Information was written by Mr. Robert D'Jovin, Architect, Directorate of Engineering and Housing, USMA.

SITE PLAN

SCALE: 1" = 100'



GALLERY STRUCTURE (DEMO)

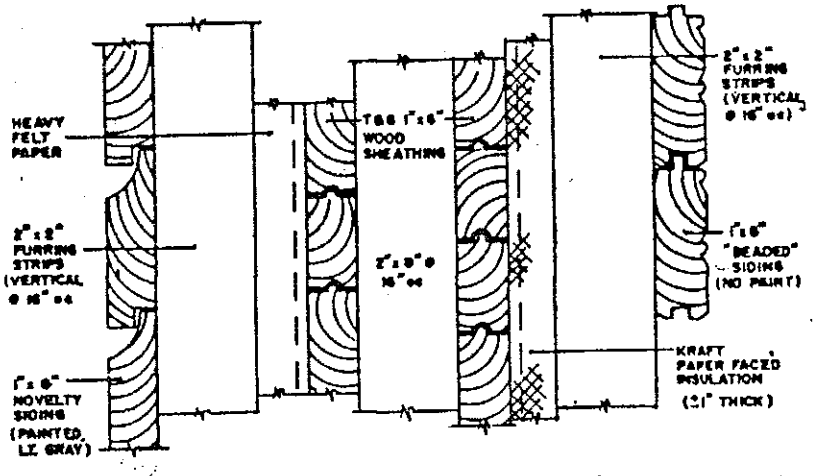
NORTH

LUSK HOUSING

SKETCH #1

DRAWN BY: THOMAS MINTER

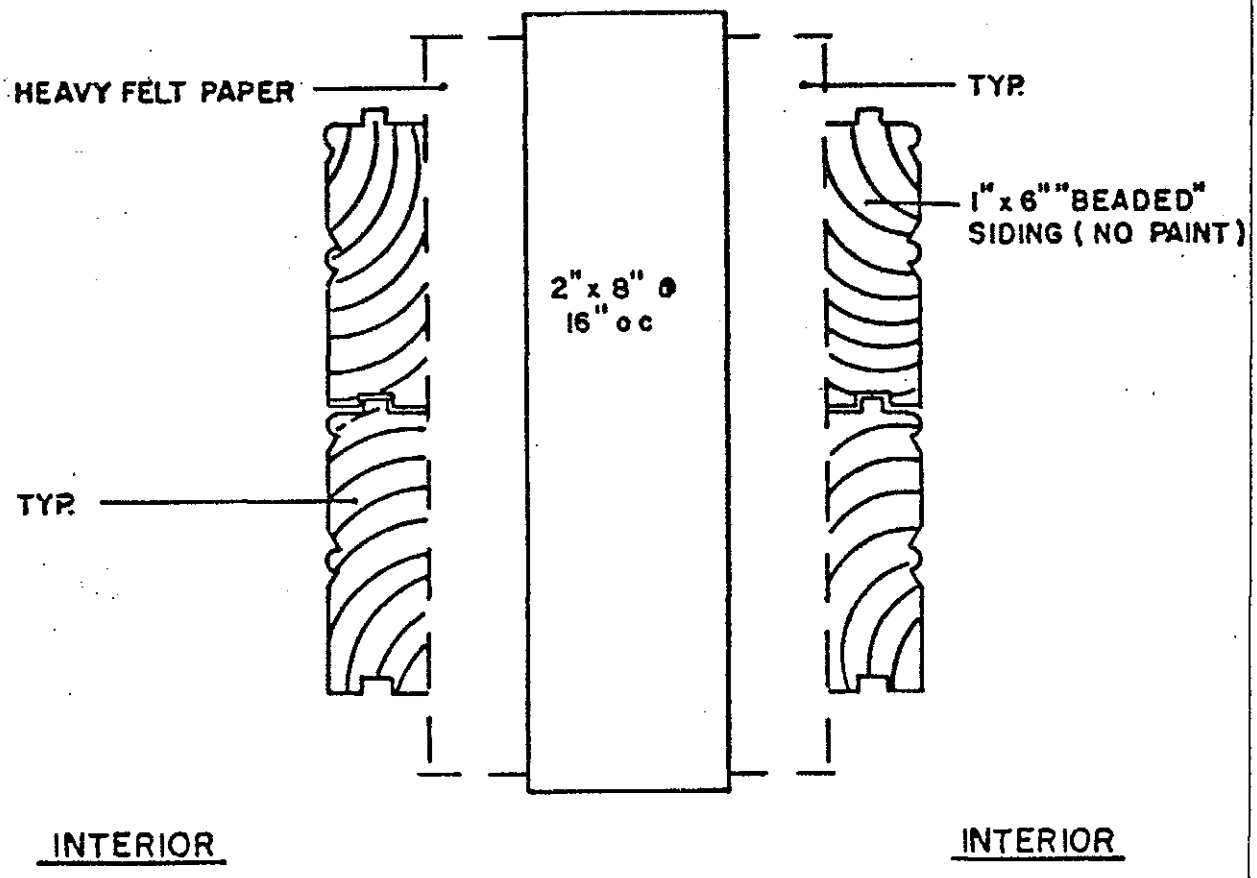
COMPOSITE CONSTRUCTION OF
EXTERIOR WALLS



SKETCH #2
SCALE: 1/4" = 1"

DRAWN BY: THOMAS MINTEN

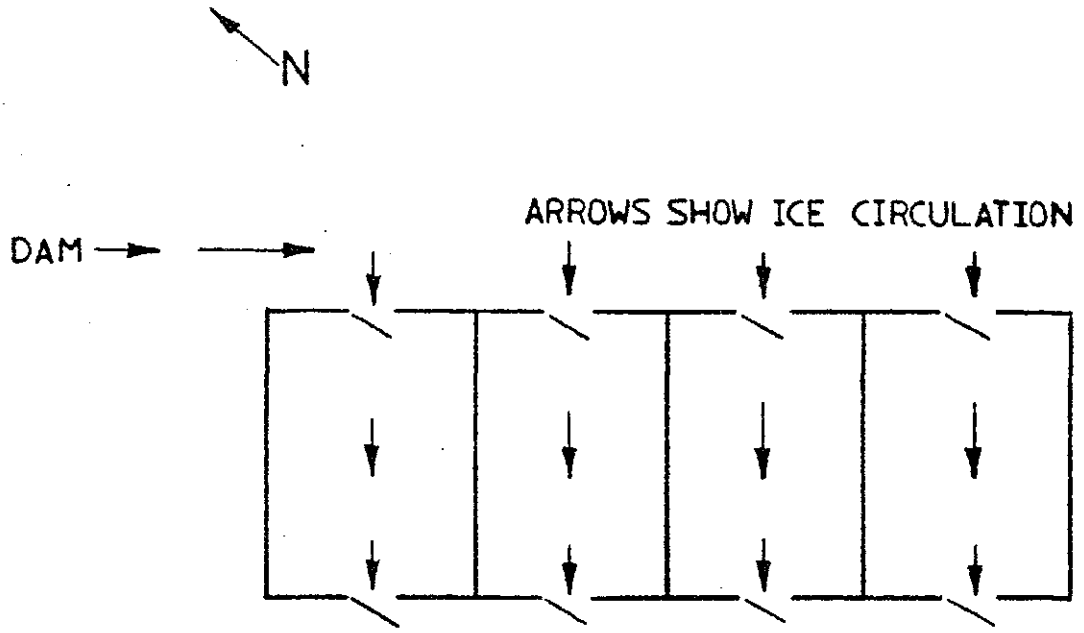
COMPOSITE CONSTRUCTION OF INTERIOR WALLS DIVIDING BAYS



SKETCH # 3

SCALE: 1/2" = 1"

DRAWN BY: THOMAS MINTER



FLOOR PLAN

SKETCH #4